

#### § 111.30-4

##### § 111.30-4 Circuit breakers removable from the front.

Circuit breakers, when installed on generator or distribution switchboards, must be mounted or arranged in such a manner that the circuit breaker may be removed from the front without unbolting bus or cable connections or deenergizing the supply, unless the switchboard is divided into sections, such that each section is capable of providing power to maintain the vessel in a navigable condition, and meets § 111.30-24 (a) and (b).

[CGD 94-108, 61 FR 28278, June 4, 1996]

##### § 111.30-5 Construction.

(a) All low voltage and medium voltage switchboards (as low and medium are determined within the standard used) must meet—

(1) For low voltages, either section 8.3 of IEEE 45-2002 or IEC 60092-302 (both incorporated by reference; see 46 CFR 110.10-1), as appropriate.

(2) For medium voltages, either section 8.4 of IEEE 45-2002 or IEC 60092-503 (incorporated by reference; see 46 CFR 110.10-1), as appropriate.

(b) Each switchboard must be fitted with a dripshield unless the switchboard is a deck-to-overhead mounted type which cannot be subjected to leaks or falling objects.

[CGD 94-108, 61 FR 28278, June 4, 1996, as amended at 62 FR 23908, May 1, 1997; USCG-2003-16630, 73 FR 65196, Oct. 31, 2008; USCG-2013-0671, 78 FR 60153, Sept. 30, 2013]

##### § 111.30-11 Deck coverings.

Non-conducting deck coverings, such as non-conducting mats or gratings, suitable for the specific switchboard voltage must be installed for personnel protection at the front and rear of the switchboard and must extend the entire length of, and be of sufficient width to suit, the operating space.

[CGD 94-108, 62 FR 23908, May 1, 1997]

##### § 111.30-15 Nameplates.

(a) Each device must have a nameplate showing the device's function.

(b) Each nameplate for a circuit breaker must show the electrical load served and the setting of the circuit breaker.

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##### § 111.30-17 Protection of instrument circuits.

(a) Each circuit that supplies a device on a switchboard, except a circuit under paragraph (b) of this section, must have overcurrent protection.

(b) A circuit that supplies a device on a switchboard must not have overload protection if it supplies:

- (1) An electric propulsion control;
- (2) A voltage regulator;
- (3) A ship's service generator circuit breaker tripping control; or
- (4) A device that creates a hazard to the vessel if deenergized.

(c) If short circuit protection is used in any of the circuits listed in paragraph (b) of this section, it must be set at not less than 500% of the expected current.

(d) A secondary circuit of a current transformer must not be fused, and the circuit from a current transformer to a device that is not in the switchboard must have a high voltage protector to short the transformer during an open circuit.

##### § 111.30-19 Buses and wiring.

(a) *General.* Each bus must meet the requirements of either—

(1) Section 7.10 of IEEE 45-1998 (incorporated by reference; see 46 CFR 110.10-1); or

(2) IEC 60092-302 (clause 7) (incorporated by reference; see 46 CFR 110.10-1).

(b) *Wiring.* Instrumentation and control wiring must be—

(1) Suitable for installation within in a switchboard enclosure and be rated at 90 °C or higher;

(2) Stranded copper;

(3) No. 14 AWG (2.10 mm<sup>2</sup>) or larger or must be ribbon cable or similar conductor size cable recommended for use in low-power instrumentation, monitoring, or control circuits by the equipment manufacturer;

(4) Flame-retardant meeting test VW-1 of UL 1581 or IEC 60332-1 (both incorporated by reference; see 46 CFR 110.10-1); and

(5) Extra flexible, if used on a hinged panel.

[CGD 94-108, 61 FR 28278, June 4, 1996, as amended at 62 FR 23908, May 1, 1997; USCG-2003-16630, 73 FR 65197, Oct. 31, 2008; USCG-2013-0671, 78 FR 60153, Sept. 30, 2013]